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# FLOOD INSURANCE STUDY

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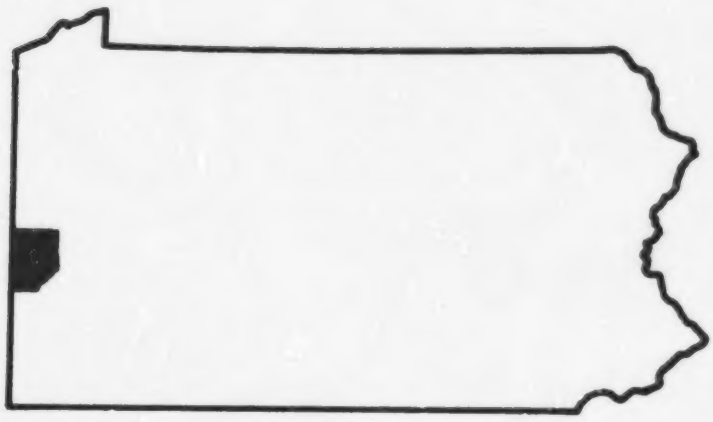
## BOROUGH OF CONWAY, PENNSYLVANIA
### BEAVER COUNTY



NOVEMBER 4, 1988

COMPLETED

Federal Emergency Management Agency

COMMUNITY NUMBER - 420107

ORIGINAL

NOTICE TO
FLOOD INSURANCE STUDY USERS

Communities participating in the National Flood Insurance Program (NFIP) have established repositories of flood hazard data for floodplain management and flood insurance study purposes. This Flood Insurance Study (FIS) may not contain all data available within the repository. It is advisable to contact the community repository for any additional data.

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FLOOD INSURANCE STUDY
BOROUGH OF CONWAY, BEAVER COUNTY, PENNSYLVANIA

## 1.0 INTRODUCTION

### 1.1 Purpose of Study

This Flood Insurance Study investigates the existence and severity of flood hazards in the Borough of Conway, Beaver County, Pennsylvania, and aids in the administration of the National Flood Insurance Act of 1968 and the Flood Disaster Protection Act of 1973. This study has developed flood risk data for various areas of the community that will be used to establish actuarial flood insurance rates and assist the community in its efforts to promote sound floodplain management. Minimum floodplain management requirements for participation in the National Flood Insurance Program (NFIP) are set forth in the Code of Federal Regulations at 44 CFR, 60.3.

In some states or communities, floodplain management criteria or regulations may exist that are more restrictive or comprehensive than the minimum Federal requirements. In such cases, the more restrictive criteria take precedence and the state (or other jurisdictional agency) will be able to explain them.

### 1.2 Authority and Acknowledgments

The sources of authority for this Flood Insurance Study are the National Flood Insurance Act of 1968 and the Flood Disaster Protection Act of 1973.

The hydrologic and hydraulic analyses for this study were prepared by the Pittsburgh District of the U. S. Army Corps of Engineers (COE) for the Federal Emergency Management Agency (FEMA), under Inter-Agency Agreement No. EMW-86-E-2226, Project Order No. 2. This work was completed in October 1986.

### 1.3 Coordination

On May 22, 1985, an initial Consultation and Coordination Officer's (CCO) meeting was held with representatives from FEMA, the borough, and the COE (the study contractor) to determine the streams to be studied by detailed methods.

On December 1, 1987, a final CCO meeting was held with representatives from FEMA, the borough, and the study contractor to review the results of the study.

## 2.0 AREA STUDIED

### 2.1 Scope of Study

This Flood Insurance Study covers the incorporated area of the Borough of Conway, Beaver County, Pennsylvania. The area of study is shown on the Vicinity Map (Figure 1).

The Ohio River was studied by detailed methods for its entire length within the community. The areas studied by detailed methods were selected with priority given to all known flood hazard areas and areas of projected development and proposed construction through October 1991.

### 2.2 Community Description

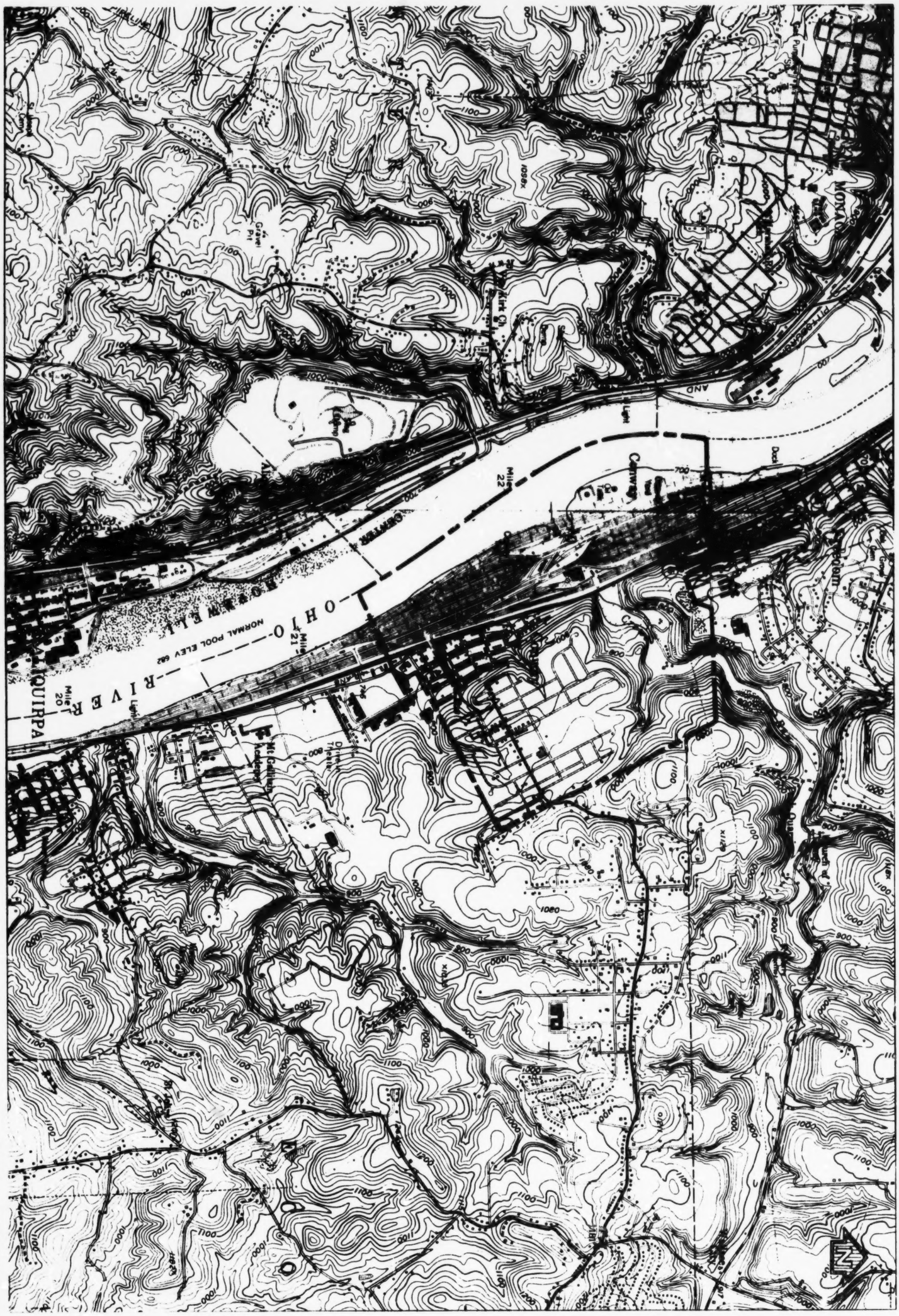
The Borough of Conway is located in central Beaver County in southwestern Pennsylvania. The land area within the borough is approximately 1.5 square miles and lies approximately 28 miles northwest of Pittsburgh. It is bordered by the Borough of Freedom and the Township of New Sewickley to the north, the Borough of Economy to the east and south, and the Township of Center to the west. In 1980, the population of the borough was 2,747, a 3 percent decrease from the 1970 population of 2,822 (Reference 1).

The 203,900 square mile drainage area of the Ohio River basin lies between the Allegheny Mountains to the east, the Mississippi River to the west, and embraces portions of 14 states. Formed at Pittsburgh by the junction of the Allegheny and Monongahela Rivers, the main river falls 429 feet in its 981 mile southwestern course to the Mississippi River at Cairo, Illinois.

The Ohio River, upstream of the community, has a moderately wide floodplain and a relatively flat river gradient. These valley characteristics are modifying and retarding factors that result in prolonged, critical river flood heights.

Above the stream's valley the local relief rises from approximately 400 to 500 feet, an average hilltop elevation rises 1,100 to 1,200 feet. In Beaver County, the valley floor varies from approximately 0.3 to 0.6 miles in width. The average slope of the river from its origin at Pittsburgh through the community is approximately 1.0 foot per mile.

The climate for this area is temperate, with the usual seasonal variation in temperature. The area is geographically located in a region of variable air mass activity subjected to polar and tropical, continental, and maritime air mass invasions. The weather is usually moderate, but is subject to frequent and rapid changes as a result of air mass movements. Measurable precipitation occurs approximately 149 days a year and amounts to approximately 36


OHIO RIVER
NORMAL POOL ELEV 682
Mile 22
Mile 21
Mile 20
MONACA
CONWAY
Dock
Light
Ramp
Pipeline
Mt Carmel Academy
Church
Cem
Quar
Ind Pk
Oil Well
Gas Well
Tank
Elem Sch
Sch
Pk
Ch

inches. Average monthly temperatures range from 31 degrees Fahrenheit ($^{o}$F) in January to 74$^{o}$F in July.

## 2.3 Principal Flood Problems

The flooding season on the Ohio River is usually December through April. Most of the floods that occur during this period are the result of heavy rain and snowmelt. However, floods may occur at any time and their duration may be several days. A height of 33.0 feet on the lower gage at Montgomery Locks and Dam is considered to be flood stage. Numerous floods have occurred in this area since continuous gage readings have been observed. The March 19, 1936, flood was the greatest flood on the Ohio River in Beaver County. It reached a stage of 41.5 feet on the upper gage at Montgomery Locks and Dam. Although summer floods are rare on the Ohio River, the flood of June 1972 was of considerable magnitude, even with the reduction from the flood control dams. It had a gage reading of 30.6 feet on the upper gage at Montgomery Locks and Dam. The following tabulation shows the highest floods of record on the Ohio River at river mile 31.7 at the Montgomery Locks and Dam upper gage:

| Date of Crest | Stage (feet) | Elevation (feet) | Discharge (cfs) |
|---|---|---|---|
| March 19, 1936 | 41.54 | 707.6[1] | 565,000 |
| December 31, 1942 | 35.54 | 701.6[1] | 457,000 |
| April 27, 1942 | 32.74 | 698.8 | 412,000 |
| January 26, 1937 | 31.84 | 697.9[1] | 398,000 |
| October 17, 1954 | 30.94 | 697.0[1] | 383,000 |
| March 8, 1945 | 30.84 | 696.9[1] | 382,000 |
| June 24, 1972 | 30.64 | 696.7[1] | 380,000 |
| March 10, 1964 | 29.34 | 695.4[1] | 360,000 |
| January 23, 1959 | 28.74 | 694.8[1] | 351,000 |

Gage Zero = 666.6 feet
[1]Includes partial or full reduction from the flood control projects.
Note: As of June 1979, gage zero has been changed to elevation 670.0 feet.

## 2.4 Flood Protection Measures

Approximately 35 percent of the Ohio River basin upstream of the Borough of Conway is controlled by 11 flood control projects that have been built and operated by the COE. These 11 projects, which were built from June 1938 to 1974, are effective in reducing flood levels on the Ohio River in the community an average of 2 to 11 feet. Stonewall Jackson Dam and Lake is now under construction on the West Fork River upstream of Weston, West Virginia. It will be effective in reducing flood levels on the Ohio River within the community. The following tabulation presents pertinent data for these projects:

| Dam and Reservoir | Drainage Area (square miles) | Date Placed in Operation |
|---|---|---|
| ALLEGHENY RIVER BASIN | | |
| Crooked Creek Dam, Crooked Creek Lake | 277 | June 1940 |
| Tionesta Dam, Tionesta Lake | 478 | December 1940 |
| Mahoning Dam, Mahoning Creek Lake | 340 | June 1941 |
| Loyalhanna Dam, Loyalhanna Lake | 290 | June 1942 |
| East Branch Dam, East Branch Clarion River Lake | 72 | June 1952 |
| Conemaugh River Dam, Conemaugh River Lake | 1,351 | December 1952 |
| Kinzua Dam, Allegheny Reservoir | 2,180 | January 1967 |
| Union City Dam, Union City Reservoir | 222 | October 1970 |
| Woodcock Creek Dam, Woodcock Creek Lake | 46 | February 1974 |
| MONONGAHELA RIVER BASIN | | |
| Tygart Dam, Tygart Lake | 1,184 | February 1938 |
| Youghiogheny River Dam Youghiogheny River Lake | 434 | March 1948 |

## 3.0 ENGINEERING METHODS

For the flooding source studied in detail in the community, standard hydrologic and hydraulic study methods were used to determine the flood hazard data required for this study. Flood events of a magnitude which are expected to be equaled or exceeded once on the average during any 10-, 50-, 100-, or 500-year period (recurrence interval) have been selected as having special significance for floodplain management and for flood insurance rates. These events, commonly termed the 10-, 50-, 100-, and 500-year floods, have a 10, 2, 1, and 0.2 percent chance, respectively, of being equaled or exceeded during any year. Although the recurrence interval represents the long term average period between floods of a specific magnitude, rare floods could occur at short intervals or even within the same year. The risk of experiencing a rare flood increases when periods greater than 1 year are considered. For example, the risk of having a flood which equals or exceeds the 100-year flood (1 percent chance of annual exceedence) in any 50-year period is approximately 40 percent (4 in 10), and, for any 90-year period, the risk increases to approximately 60 percent (6 in 10). The analyses reported herein reflect flooding potentials based on conditions existing in the community at the time of completion of this study. Maps and flood elevations will be amended periodically to reflect future changes.

## 3.1 Hydrologic Analyses

Hydrologic analyses were carried out to establish the peak discharge-frequency relationships for the flooding source studied in detail affecting the community.

Ohio River stream mileages as depicted in this study are "Official Stream Mileages" as agreed upon between Federal, State, and local agencies, which have jurisdiction within the community. Therefore, measurable map distances between consecutive mile points may not scale exactly.

Gage readings have been maintained by the COE at Montgomery Locks and Dam located approximately 9 mile downstream of Conway since June 1936.

Natural discharge-frequency curves on the Ohio River were developed in accordance with methods presented in Bulletin 17A (Reference 2). Modified discharge-frequency curves on the Ohio River resulted from routing holdouts from 12 representative floods for the Ohio River modified by an upstream reservoir system. This includes reservoirs completed and under construction by 1976. Data were plotted opposite original flood data on a grid containing a reference (1965) flow reduction of natural flow and a new best-fit curve was drawn. Total reductions were read from the new curve at selected natural flow frequencies and subtracted from natural flows at those frequencies in order to obtain new modified-flow values.

A summary of the drainage area-peak discharge relationships for the Ohio River is shown in Table 1, "Summary of Discharges."

TABLE 1 - SUMMARY OF DISCHARGES

| FLOODING SOURCE AND LOCATION | DRAINAGE AREA (sq. miles) | PEAK DISCHARGES (cfs) 10-YEAR | 50-YEAR | 100-YEAR | 500-YEAR |
|---|---|---|---|---|---|
| OHIO RIVER | | | | | |
| At upstream confluence with Beaver River | 19,620 | 284,000 | 362,000 | 394,000 | 480,000 |

## 3.2 Hydraulic Analyses

Analyses of the hydraulic characteristics of flooding from the source studied were carried out to provide estimates of the elevations of floods of the selected recurrence intervals.

Cross-sectional data for the Ohio River were taken from soundings and topographic maps at a scale of 1:7,200 with a contour interval of 5 feet (Reference 3). Further field checks were made where any information was questionable or when an area required specific

roughness inspection and evaluation. The Ohio River within the borough includes 1.6 miles of the Montgomery Navigation Pool.

Locations of selected cross sections used in the hydraulic analyses are shown on the Flood Profiles (Exhibit 1). For stream segments for which a floodway was computed (Section 4.2), selected cross-section locations are also shown on the Flood Insurance Rate Map (Exhibit 2).

Water-surface elevations of floods of the selected recurrence intervals were computed using the COE HEC-2 step-backwater computer program (Reference 4). For the Ohio River, the well-defined floods of 1936, 1964, 1972, and moderate flow of 1976 were reproduced successfully using the roughness coefficients shown below. Flood profiles were drawn showing computed water-surface elevations for floods of the selected recurrence intervals. Starting water-surface elevations on the Ohio River were determined by stage-discharge relationships and high-water marks downstream from the corporate limits.

Roughness coefficiencs (Manning's "n") used in the hydraulic computations were chosen on the basis of field inspection or verification of roughness requirements in order to reproduce profiles for known floods for which high-water marks were obtained and flow quantities were measured or easily calculated. The channel "n" values for the Ohio River ranged from 0.028 to 0.032, and the overbank "n" value was 0.070.

The hydraulic analyses for this study were based on unobstructed flow. The flood elevations shown on the profiles are thus considered valid only if hydraulic structures remain unobstructed, operate properly, and do not fail.

All elevations are referenced to the National Geodetic Vertical Datum of 1929 (NGVD). Elevation reference marks used in this study are shown on the maps; the descriptions of the marks are presented in Elevation Reference Marks (Exhibit 3).

## 4.0 FLOODPLAIN MANAGEMENT APPLICATIONS

The NFIP encourages State and local governments to adopt sound floodplain management programs. Therefore, each Flood Insurance Study provides 100-year flood elevations and delineations of the 100- and 500-year floodplain boundaries and 100-year floodway to assist in developing floodplain management measures.

## 4.1 Floodplain Boundaries

To provide a national standard without regional discrimination, the 1 percent annual chance (100-year) flood has been adopted by FEMA as the base flood for floodplain management purposes. The 0.2 percent annual chance (500-year) flood is employed to indicate additional areas of flood risk in the community. For the stream studied in detail, the 100- and 500-year floodplain boundaries have been delineated using the flood elevations determined at each cross section. Between cross sections, the boundaries were interpolated using topographic maps at a scale of 1:2,400 with a contour interval of 5 feet (Reference 5).

The 100- and 500-year floodplain boundaries are shown on the Flood Insurance Rate Map (Exhibit 2). On this map, the 100-year floodplain boundary corresponds to the boundary of the areas of special flood hazards (Zones A and AE), and the 500-year floodplain boundary corresponds to the boundary of areas of moderate flood hazards. In cases where the 100- and 500-year floodplain boundaries are close together, only the 100-year floodplain boundary has been shown. Small areas within the floodplain boundaries may lie above the flood elevations but cannot be shown due to limitations of the map scale and/or lack of detailed topographic data.

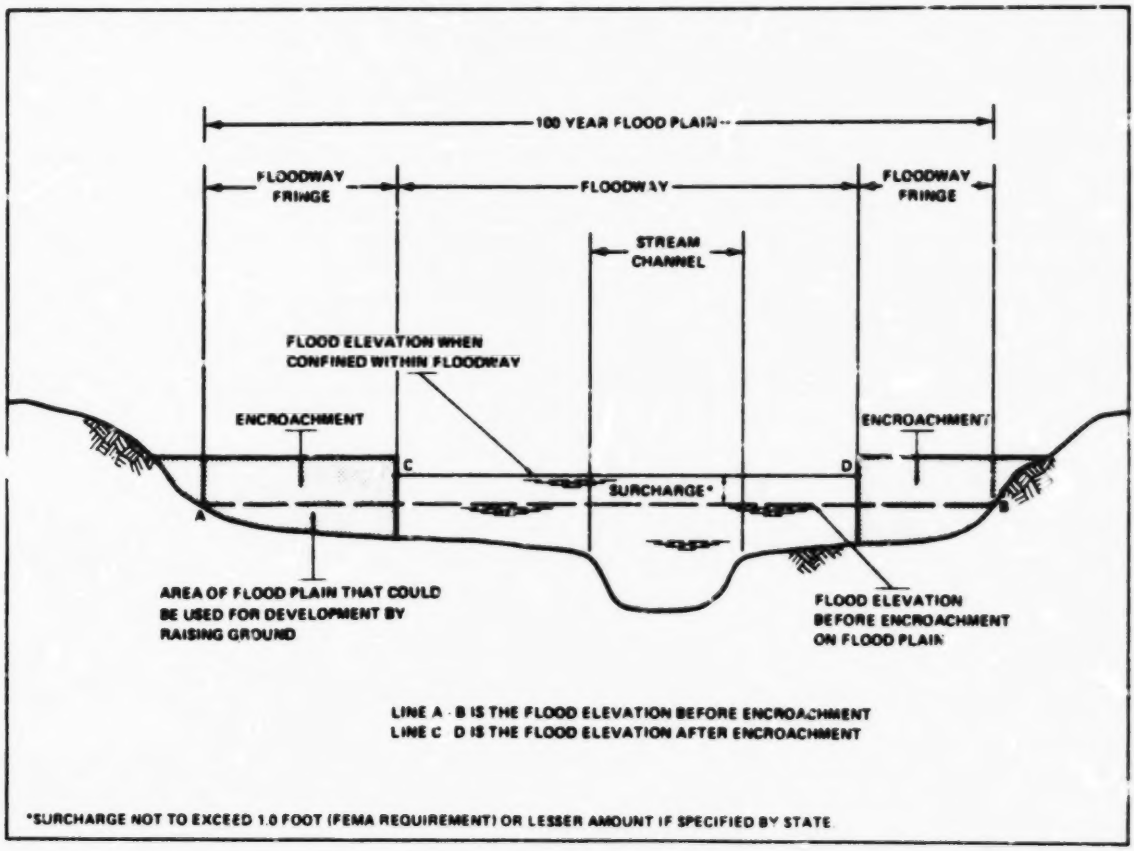
## 4.2 Floodways

Encroachment on floodplains, such as structures and fill, reduces flood-carrying capacity, increases flood heights and velocities, and increases flood hazards in areas beyond the encroachment itself. One aspect of floodplain management involves balancing the economic gain from floodplain development against the resulting increase in flood hazard. For purposes of the National Flood Insurance Program, a floodway is used as a tool to assist local communities in this aspect of floodplain management. Under this concept, the area of the 100-year floodplain is divided into a floodway and a floodway fringe. The floodway is the channel of a stream, plus any adjacent floodplain areas, that must be kept free of encroachment so that the 100-year flood can be carried without substantial increases in flood heights. Minimum federal standards limit such increases to 1.0 foot, provided that hazardous velocities are not produced. The floodway in this study is presented to local agencies as a minimum standard that can be adopted directly or that can be used as a basis for additional floodway studies.

The floodway presented in this study was computed for certain stream segments on the basis of equal conveyance reduction from each side of the floodplain. Floodway widths were computed at cross sections. Between cross sections, the floodway boundaries were interpolated.

The results of the floodway computations are tabulated for selected cross sections (Table 2). The computed floodway is shown on the Flood Insurance Rate Map (Exhibit 2). In cases where the floodway and 100-year floodplain boundaries are either close together or collinear, only the floodway boundary is shown. Portions of the floodway widths for the Ohio River extend beyond the corporate limits.

The area between the floodway and 100-year floodplain boundaries is termed the floodway fringe. The floodway fringe encompasses the portion of the floodplain that could be completely obstructed without increasing at any point. Typical relationships between the floodway and the floodway fringe and their significance to floodplain development are shown in Figure 2.


100 YEAR FLOOD PLAIN
FLOODWAY FRINGE
FLOODWAY
FLOODWAY FRINGE
STREAM CHANNEL
FLOOD ELEVATION WHEN CONFINED WITHIN FLOODWAY
ENCROACHMENT
ENCROACHMENT
C
D
SURCHARGE*
A
B
AREA OF FLOOD PLAIN THAT COULD BE USED FOR DEVELOPMENT BY RAISING GROUND
FLOOD ELEVATION BEFORE ENCROACHMENT ON FLOOD PLAIN
LINE A - B IS THE FLOOD ELEVATION BEFORE ENCROACHMENT
LINE C - D IS THE FLOOD ELEVATION AFTER ENCROACHMENT
*SURCHARGE NOT TO EXCEED 1.0 FOOT (FEMA REQUIREMENT) OR LESSER AMOUNT IF SPECIFIED BY STATE

**FLOODWAY SCHEMATIC** Figure 2

## 5.0 INSURANCE APPLICATIONS

For flood insurance rating purposes, flood insurance zone designations are assigned to a community based on the results of the engineering analyses. The zones are as follows:



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| FLOODING SOURCE | | FLOODWAY | | | BASE FLOOD WATER SURFACE ELEVATION | | | |
|---|---|---|---|---|---|---|---|---|
| CROSS SECTION | DISTANCE[1] | WIDTH[2] (FEET) | SECTION AREA (SQUARE FEET) | MEAN VELOCITY (FEET PER SECOND) | REGULATORY | WITHOUT FLOODWAY | WITH FLOODWAY | INCREASE |
| | | | | | (FEET NGVD) | | | |
| Ohio River | | | | | | | | |
| A | 22.5 | 1500/800 | 67,869 | 5.8 | 705.9 | 705.9 | 706.5 | 0.6 |
| B | 22.0 | 1660/860 | 71,249 | 5.5 | 706.2 | 706.2 | 706.8 | 0.6 |
| C | 21.5 | 1480/1000 | 68,703 | 5.7 | 706.3 | 706.3 | 707.0 | 0.7 |

[1]Miles below confluence of Monongahela and Allegheny Rivers
[2]Width/width within corporate limits

TABLE 2

FEDERAL EMERGENCY MANAGEMENT AGENCY

**BOROUGH OF CONWAY, PA**

(BEAVER CO.)

**FLOODWAY DATA**

**OHIO RIVER**

Zone A

Zone A is the flood insurance rate zone that corresponds to the 100-year floodplains that are determined in the Flood Insurance Study by approximate methods. Because detailed hydraulic analyses are not performed for such areas, no base flood elevations or depths are shown within this zone.

Zone AE

Zone AE is the flood insurance rate zone that corresponds to the 100-year floodplains that are determined in the Flood Insurance Study by detailed methods. In most instances, whole-foot base flood elevations derived from the detailed hydraulic analyses are shown at selected intervals within this zone.

Zone AH

Zone AH is the flood insurance rate zone that corresponds to the areas of 100-year shallow flooding (usually areas of ponding) where average depths are between 1 and 3 feet. Whole-foot base flood elevations derived from the detailed hydraulic analyses are shown at selected intervals within this zone.

Zone AO

Zone AO is the flood insurance rate zone that corresponds to the areas of 100-year shallow flooding (usually sheet flow on sloping terrain) where average depths are between 1 and 3 feet. Average whole-depths derived from the detailed hydraulic analyses are shown within this zone.

Zone A99

Zone A99 is the flood insurance rate zone that corresponds to areas of the 100-year floodplain that will be protected by a Federal flood protection system where construction has reached specified statutory milestones. No base flood elevations or depths are shown within this zone.

Zone V

Zone V is the flood insurance rate zone that corresponds to the 100-year coastal floodplains that have additional hazards associated with storm waves. Because approximate hydraulic analyses are performed for such areas, no base flood elevations are shown within this zone.

Zone VE

Zone VE is the flood insurance rate zone that corresponds to the 100-year coastal floodplains that have additional hazards associated with storm waves. Whole-foot base flood elevations derived from the

detailed hydraulic analyses are shown at selected intervals within this zone.

Zone X

Zone X is the flood insurance rate zone that corresponds to areas outside the 500-year floodplain, areas within the 500-year floodplain, and to areas of 100-year flooding where average depths are less than 1 foot, areas of 10-year flooding where the contributing drainage area is less than 1 square mile, and areas protected from the 100-year flood by levees. No base flood elevations or depths are shown within this zone.

Zone D

Zone D is the flood insurance rate zone that corresponds to unstudied areas where flood hazards are undetermined, but possible.

## 6.0 FLOOD INSURANCE RATE MAP

The Flood Insurance Rate Map is designed for flood insurance and floodplain management applications.

For flood insurance applications, the map designates flood insurance rate zones as described in Section 5.0 and, in the 100-year floodplains that were studied by detailed methods, shows selected whole-foot base flood elevations or average depths. Insurance agents use the zones and base flood elevations in conjunction with information on structures and their contents to assign premium rates for flood insurance policies.

For floodplain management applications, the map shows by tints, screens, and symbols, the 100- and 500-year floodplains. Floodways and the locations of selected cross sections used in the hydraulic analyses and floodway computations are shown where applicable.

## 7.0 OTHER STUDIES

The COE prepared a Flood Plain Information Report concerning flooding of the Ohio River and Beaver River within Beaver County, for the Beaver County Commissioners in 1973 (Reference 6). In that report, the profile for the Ohio River shows the 100-year flood elevation within the study area to be 1.0 to 1.5 feet lower than the base flood elevations used in this study. The profile in this study is based on stage and frequency flow as developed by the Ohio River Division of the COE in 1976. The Ohio River Division of the COE developed a new profile for the Ohio River that was used for the profile of this study.

Flood Insurance Studies have been published for the Township of Center, and the Boroughs of Economy and Freedom (References 7, 8, and 9). The results of this study are in agreement with the results of those studies.

Due to its more detailed nature, this study supersedes the Flood Hazard Boundary Map for the Borough of Conway (Reference 10).

## 8.0 LOCATION OF DATA

Information concerning the pertinent data used in preparation of this study can be obtained by contacting FEMA, the Natural and Technological Hazards Division, Liberty Square Building (Second Floor), 105 South Seventh Street, Philadelphia, Pennsylvania 19106.

## 9.0 BIBLIOGRAPHY AND REFERENCES


1. U. S. Department of Commerce, Bureau of the Census, 1980 Census of Population, Number of Inhabitants, Pennsylvania, Washington, D. C., U. S. Government Printing Office, 1981.

2. Water Resources Council, "Guidelines for Determining Flood Flow Frequency," Bulletin 17A, Washington, D. C., June 1977.

3. U. S. Army Corps of Engineers, Pittsburgh District, Topographic Maps, Scale 1:7,200, Contour Interval 5 Feet: Ohio River, July 1966.

4. U. S. Army Corps of Engineers, Hydrologic Engineering Center, HEC-2 Water Surface Profiles, Generalized Computer Program, Davis, California, October 1973.

5. U. S. Army Corps of Engineers, Pittsburgh District, Ohio River, Pittsburgh to Mile 30.9 Topography, Scale 1:2,400, Contour Interval 5 Feet: Pittsburgh, Pennsylvania, March 1964, Updated September 1968.

6. U. S. Army Corps of Engineers, Pittsburgh District, Flood Plain Information Report, Beaver County, Pennsylvania, Pittsburgh, Pennsylvania, March 1973.

7. Federal Emergency Management Agency, Flood Insurance Study, Township of Center, Beaver County, Pennsylvania, Washington, D. C., June 15, 1981.

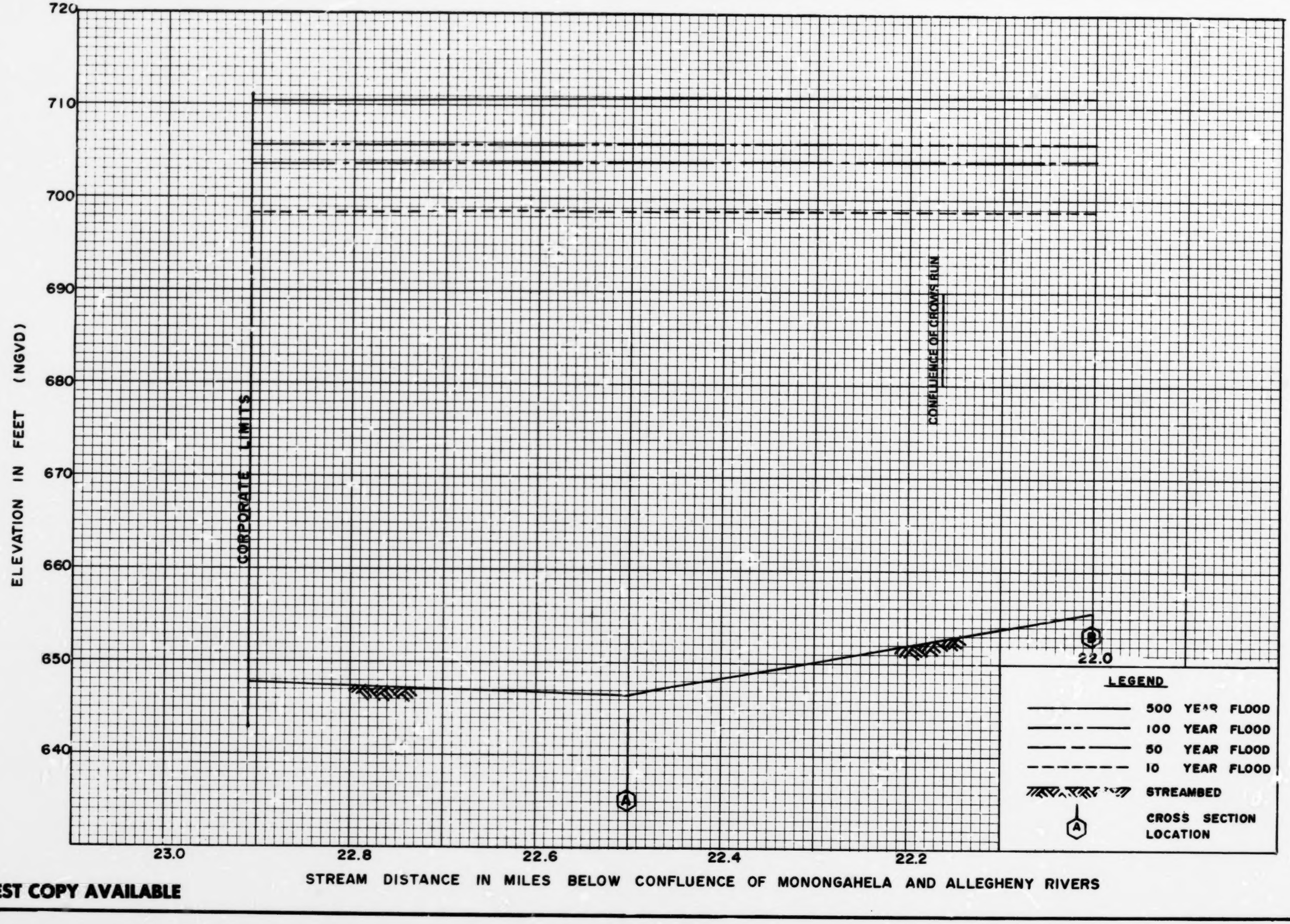
8. Federal Emergency Management Agency, Flood Insurance Study, Borough of Economy, Beaver County, Pennsylvania, Washington, D. C., June 15, 1981.

9. Federal Emergency Management Agency, Flood Insurance Study, Borough of Freedom, Beaver County, Pennsylvania, Washington, D. C., February 1, 1980.

10. U. S. Department of Housing and Urban Development, Federal Insurance Administration, Flood Hazard Boundary Map, Borough of Conway, Beaver County, Pennsylvania, May 28, 1976.

EXHIBIT 3 - ELEVATION REFERENCE MARKS

| Reference Mark | Elevation (Feet NGVD) | Description of Location |
|---|---|---|
| RM 1 | 705.91 | T cut in top of steel rod located 1 foot riverward of river edge road, 36.72 feet riverward of gage river rail, and 3.67 feet upstream and landward of nail and washer in deadman pole. |
| RM 2 | 706.44 | T cut in steel pin located 12.59 feet riverward of river rail of river track, 37.46 feet landward of center of valve handle of uppermost 6-inch pipe line and 3.6 feet below rail elevation. |
| RM 3 | 710.40 | Tack in lead plug set in top of concrete box manhole above outlet of Crowa Run under railroad yard. Manhole is approximately 4 feet above ground, 100 feet downstream of Conway Sewage Plant and 4.08 feet from radio tower on hill behind Freedom. |
| RM 4 | 705.66 | Steel pin, 0.5 foot below ground surface, 29.27 feet riverward of gage river rail, 74.68 feet upstream of nail and washer in pole and 79.96 feet downstream of nail and washer in pole with loud speaker. |
| RM 5 | 708.39 | Steel pin located 0.4 foot below ground surface at land edge of earth road. Pin is approximately 6.17 feet riverward of south bound main track, 2.2 feet below river rail of main line, and 690 feet upstream from mile post 22, Montgomery Pool. |

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**FLOOD PROFILES**

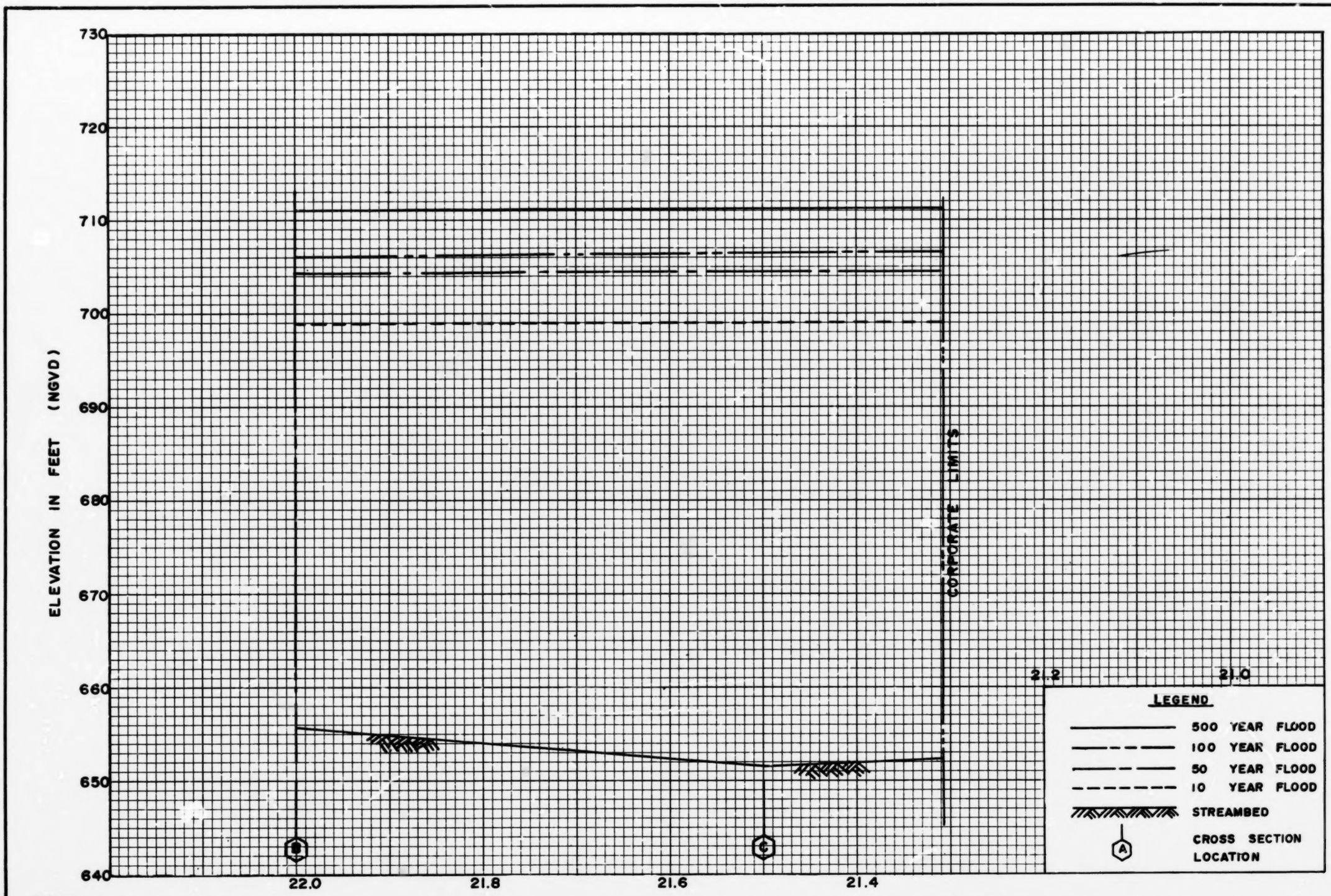
**OHIO RIVER**

**FEDERAL EMERGENCY MANAGEMENT AGENCY**

**BOROUGH OF CONWAY, PA**

**( BEAVER COUNTY )**

**01P**

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FLOOD PROFILES

OHIO RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

BOROUGH OF CONWAY, PA

( BEAVER COUNTY )

02P